

Yuanhan (William), Li

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Research Interests

Computer Architecture, Digital Design, VLSI

Skills

Languages: English, Mandarin

Design/Development: Digital Design, Android, Web

Technical Languages: Python, Java, C, Go, Java Script, html, SQL, RISC-V, Verilog, Chisel

Data Science: Data analysis and modeling

Education

University of California, Berkeley

Expected Graduation: May 2024

- B.A. Computer Science

Hefei No.8 High School Sino-U.S. Program

Aug 2016 – Jun 2019

- High School Diploma

Research

Undergraduate Researcher at Berkeley SLICE Lab

Jan 2023 – Present

- Advised by Prof. Borivoje Nikolic and Vighnesh Iyer; currently working on creating a priority queue library for Chisel, an open-source hardware description language

Undergraduate Researcher in Prof. Dan Garcia's CS Education Research Group

Feb 2021 – Present

- Participated in the adaptation of past-year problem sets to the online learning and testing platform Prairie Learn using html, JS, and Python, supporting auto-grading and question data randomization
- Developed a concept map creation tool that can let teachers define map once using JSON and then automatically convert it to both pdf and web format that can be integrated with course website

Undergraduate Research Apprentice in Berkeley Cool-Climate Network Eco-Data Lab

Feb 2021 – May 2021

- Guided by Dr. Chris Jones to use React and D3.js to implement energy and pollution data visualization

Teaching

CS 61C (Great Ideas in Computer Architecture)

Jun 2021 – Present

- Worked as teaching staff to help students on topics such as C language, RISC-V assembly, memory architecture, pipelining, and RISC-V CPU datapath design during weekly labs and office hours

EECS 16A (Designing Information Devices and Systems)

Aug 2020 – May 2021

- Worked as reader to grade students' weekly problem sets and exams

Internships

Firmware Integration Intern at Tesla

Feb 2022 – Jul 2022

- Created a dashboard web app using Flask to visualize vehicle self-test sequences and dependencies; integrated existing python tools into the web app
- Worked with engineers from Berlin factory to develop a vehicle firmware trial management dashboard using Flask; responsible for working with IT department to integrate company email SSO and implementing features such as auto-refresh based on WebSocket broadcast, auto-holding vehicles in trial from leaving factories, and log view
- Provided tech support for the deployment of a vehicle self-test management tool

Software Engineering Intern at Data Intelligence Department of Glodon Company Limited

Jun 2020 – Aug 2020

- Worked under guidance of senior software engineers and participated in the development of Glodon's AI item pricing platform for construction projects by using Python scripts to automate training data cleaning
- Debugged and maintained a legacy large-scale key-word extraction software

Projects

Robochip, a RISC-V SoC for Robotics Applications (ELENG 194)

Jan 2023 – Present

- Working in the Memory team of Robochip, a RISC-V SoC based on Intel-16nm platform; collaborating with other teams in an Agile workflow on digital design and aiming to send it for fabrication by the end of May 2023

3-Stage Pipelined RISC-V Processor on FPGA (EECS 151)

Aug 2022 – Dec 2022

- Worked with a partner and implemented a full three-stage pipelined RISC-V processor, including modules such as a register file, ALU, control logic, and a two-way set associative cache, using Verilog on an FPGA hardware platform

Software Course Projects

Jun 2018 – Present

- Completed several significant programming/design projects as part of college-level CS courses taken at Berkeley, which includes a LISP-family language interpreter (in Python), a local git system (in Java), a simplified Python Numpy package (in C), a secure file storage and sharing system (in Go)

Frontend Developer of Cal Course - a Course-Chat-Group QR-Code Sharing Site

May 2020 – Present

- Worked with team to use html and JS to develop the web app (<https://calcourse.com>), responsible for implementing functions such as email verification login, missing course request form, and QR code upload
- Maintained and regularly update the app with hundreds of active users

Team leader and Developer of Ocean – an Android Screen Time Management App

Jun 2018 – May 2020

- Worked with team to research user expectations and design features of the app
- Using Java to implement task management, apps blacklists during work, and tracking progress
- Created a website to showcase app functionalities and provided download links (<https://ocean.williamlyh.com>); published the app to Google Play

Honors and Awards

EECS Honors Program

Feb 2023 – Present

Honorable Mention in the Mathematical Contest in Modeling

2019